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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,464	12/28/2004	Takashi Matsuda	28951.2183	2872
27890 7590 09/07/2007 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W. WASHINGTON, DC 20036			EXAMINER VIDWAN, JASJIT S	
			ART UNIT 2182	PAPER NUMBER
			MAIL DATE 09/07/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/516,464

Applicant(s)

MATSUDA ET AL.

Examiner

Jasjit S. Vidwan

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16, 19-22 and 25-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 19-22 and 25-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

Claims 16, 19-22 and 25-31 are pending

Claims 1-15 have been cancelled as per documents submitted 5/10/06

***Response to Arguments***

1. Applicant's arguments filed 06/06/2007 have been fully considered but they are not persuasive. Applicant argues that prior art of record (Eisele) fails to teach "main board, sub-board, and a flexible bend connecting the main board and the sub-board, the main board and the sub-board being folded at the flexible bend such that the main board and the sub-board face each other within the adapter body" and further the main board and the sub-board form a card holder by maintaining a distance between the main board and the sub-board.
2. As per above argument, **Examiner disagrees**. Examiner agrees with the Applicant on the point that Eisele fails to teach the above limitations, however Eisele as modified by Mizutani now provide a system meeting the above limitations. Eisele teaches a system of accepting daughter/memory card into a mother card's cardholder. Furthermore, Eisele teaches two sub-cards facing each other with sufficient distance between the two to create an opening for accepting a memory card therein. As will be shown in the rejection underneath, Eisele does not expressly disclose that the two boards folded are therein are in fact two distinct boards (main board and the sub-board) and further that two boards are connected via a flexible bend. However, Mizutani teaches system of having electronic boards having main and sub-boards folded in order to preserve space. Therefore, in light of the rejection as cited below, Examiner submits that prior art still reads on the claimed invention.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious

Art Unit: 2182

at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 16, 19, 20, 21, 22, 27, 28, 29, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisele et al, Patent No: 6,089,459 **[herein after Eisele]** and further in view of Mizutani et al. U.S. Patent No: 5,777,275 **[herein after Mizutani]**.

9. **As per claim 16 and 28**, Eisele teaches a card adapter **[Fig. 11a, element 1171]** for coupling a compact memory card **[Fig. 11b, element 118]** to a card receiver compliant with a CompactFlash Association Standard **[Col. 7, Lines 45-52]**, the card adapter comprising:

An adapter body insertable along a first direction into a card receiver **[Fig. 3, Element 302]**, said body having an inlet for receiving along a second direction a compact memory card **[Fig. 11a, Element 123]**, said first and second directions being orthogonal **[Fig. 11a, element 113 and 119]**, said adapter body and said card receiver are coplanar **[Fig. 11a]**,

A circuit board within said body for electrically **connecting [see Fig. 1, elements 105, also see Col. 6, Lines 12-17, "electrical contacts"]** said card receiver and said compact memory card, said circuit board comprising:

- (i) A first connector for electrically **[Col. 7, Lines 45-52]** connecting said card adapter to said card receiver **[Fig. 11a, Element 113]**
- (ii) A second connector connecting said card adapter to said compact memory card **[Fig. 11a, Element 119]**; and
- (iii) A circuit coupling said first connector and the second connector for converting signals between the first and second connectors **[Fig. 11a, Elements 115-117]**.

Furthermore, Eisele teaches a system wherein a surface of the adapter body and the housing of the second connector form a card holder configured to hold a compact memory card therein **[see Fig. 7b, elements 703]**, the card holder is within the adapter body and the housing of the second connector maintaining a distance between the main board and the sub-board which face each other **[see Fig. 7b, element 700 – the two boards face each other]**. Eisele fails to teach a system wherein the circuit board

has a foldable surface having a main board, sub-board and a flexible bend connecting the main board and the sub-board. However, Mizutani teaches a system wherein there exists a foldable surface [see Mizutani, Fig. 1, Element 3b], in order to effectively increase the areas of the flat portions of the circuit board [Col. 2, Lines 9-11]. Furthermore, Mizutani teaches a circuit board comprising a main board [see Mizutani, Fig. 4, Element 1a] and sub-board [see Mizutani, Fig. 4, Element 1b] with a flexible bend [see Mizutani, Fig. 3, Element 3] to connect main board and the sub-board, and is folded at the flexible bend to insert into the card holder [see Mizutani, Fig. 3, Element 3], and the main board and the sub-board face each other within the adapter body [see Mizutani, Fig. 3, elements 1a-1b].

One of ordinary skill in the art at the time of applicant's invention would have clearly recognized that it is quite advantageous to include a circuit board that includes the functionality of being able to fold within itself in order to reduce the space restrictions of more compact adapter. It is for this reason that one of ordinary skill in the art would have been motivated to combine Eisele's teachings with that of Mizutani in order to take advantage of providing a smaller and more compact memory card adapter.

11. **As per claim 19**, Eisele as modified by Mizutani above teaches:

A Sub-board that mounts the first connector and the second connector in a same surface [see Mizutani, Col. 4, Lines 23-28].

A Main board mounts the signal processing circuit in the same surface [see Mizutani, Fig. 5 elements 2a].

The first connector and the second connector are connected via the signal processing circuit [see Eisele, Fig. 7a, elements 511-513].

12. **As per claim 20**, Teachings of Eisele as modified by the teachings of Mizutani as applied above, teach a card adapter wherein at least one of the main board and the sub-board in a folded structure has an opening equal to or wider than the holder in a portion corresponding to the holder [see Mizutani, Fig. 3, There exists a considerable distance between boards 1a and 1b].

13. **As per claim 21**, Teachings of Eisele as modified by the teachings of Mizutani as applied above, teach a card adapter wherein the main body is L-shaped and is positioned on the second connector housing when the main board is folded **[see Mizutani, Fig. 5, element 1b]**.
14. **As per claim 22**, Teachings of Eisele as modified by the teachings of Mizutani as applied above, teach a card adapter wherein the holder is formed between one surface of the adapter body and the sub-board **[see Mizutani, Fig. 4, element 3]**.
15. **As per claim 25**, Teachings of Eisele as modified by Mizutani teach a card adapter wherein the circuit board connects the first connector and the second connector electrically, and mounts a circuit to convert a pin arrangement **[see Eisele, Fig. 7a, Element 701 and 510-513]**.
17. **As per claims 27 and 30**, Eisele as modified by Mizutani above teach a card adapter wherein the circuit board connects the first connector and the second connector electrically, and mounts a circuit to convert a pin arrangement **[see Eisele, Fig. 7a, Element 701 and 510-513]**.
18. **As per claim 29**, Eisele as modified by Mizutani above teach a card adapter where the main board is bonded inside of the top surface via an insulating adhesive layer and the sub-board inside of the bottom surface via the adhesive layer **[See Mizutani, Col. 3, Lines 19-29]**.
19. **As per claim 31**, Eisele as modified by Mizutani above teach a card adapter wherein the main board is L-shaped **[see Mizutani, Fig. 2]** a circuit board comprising a main board **[see Mizutani, Fig. 4, Element 1a]** and sub-board **[see Mizutani, Fig. 4, Element 1b]** with a flexible bend **[see Mizutani, Fig. 3, Element 3]** to connect main board and the sub-board, and is folded at the flexible bend to insert into the card holder **[see Mizutani, Fig. 3, Element 3]**, and the main board and the sub-board face each other within the adapter body **[see Mizutani, Fig. 3, elements 1a-1b]**.
20. Claims 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eisele and Mizutani and further in view of Hong et al. U.S. Pub. No: 2002/0039245 **[herein after Hong]**.
21. Eisele and Mizutani teach the limitations of Claim 16, however fails to teach having processing circuit on one board while having first and second connectors on the sub-board. Hong of analogous art also teaches having a main board **(see Hong Fig. 6, element 120)** and sub-board **(see Fig. 6, element 110)** that is connected via a flexible bend **(See Fig. 7, element 112)**. Further, Hong teaches having the

processing circuit (**element 18, driving circuit**) disposed in the first housing (**main board**) and the connectors [**First connector being – Fig. 10, element 222 & second connector being Fig. 10, element 221**] in the second housing (**sub-board**) [see Hong, Paragraph 0030, “In addition, it is understood that the driving circuit could be disposed in the first case such that the second case is used to form a communication pathway, electrical or otherwise, to allow the data to be transmitted between the laptop computer and the recording and reproducing device].

It would have been obvious to one of ordinary skill to combine the above teachings in order to take advantage of having function based sub-cards that are more efficient as each performs focused and designated task. It is for this reason that one of ordinary skill in the art would have been motivated to combine the above teachings.

#### ***Conclusion***

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasjit S. Vidwan whose telephone number is (571) 272-7936. The examiner can normally be reached on 8am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KIM HUYNH can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2182

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSV  
8/17/07



KIM HUYNH  
SUPERVISORY PATENT EXAMINER

8/04/07